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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,685	08/16/2001	Yasuhiro Tanaka	P/1071-1435	3334

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EXAMINER	
JONES, STEPHEN E	
ART UNIT	PAPER NUMBER
2817	

DATE MAILED: 05/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/931,685

Applicant(s)

TANAKA, YASUHIRO

Examiner

Stephen E. Jones

Art Unit

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fw

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-10 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/2/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/6/04 has been entered.

Election/Restrictions

Claim 9 remains withdrawn by election by original presentation as detailed in paper #10.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6-7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admitted prior art (AAPA) figure 14 in view of Kubota et al (of record).

The AAPA figure 14 discloses a non-reciprocal isolator device for the transmission circuit of a portable phone (i.e. inherently includes reception and transmission circuits) that includes a central electrode assembly 240 having a ferrite

270 with central electrodes 271-273 separated by insulating sheets (i.e. "films") with a metallic case 250. Permanent magnet 260 is shown (see page 1). Electrode 276 is provided along the bottom of the ferrite 270. Figure 14 shows the connecting electrodes for 271-273 located on the sides of the ferrite 270 (i.e. directly on the "margins").

However, the AAPA figure 14 does not disclose a method including cutting an assembly from a ferrite motherboard and forming the connecting electrodes of plated conductive material or an applied paste (or other method as claimed).

The Kubota et al. reference teaches that a multilayer composite electronic component may be made by the method of starting from a laminated motherboard and slicing along the via holes to form electrodes. This method is considered equivalent to forming individual elements separately (see col. 1, lines 10-60). Note that Kubota also teaches that the via holes may be filled with metal paste (see Col. 8, lines 9-13) and also that these holes can alternatively have conductor films formed on them before cutting (see Col. 1, lines 54-57).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to have manufactured the device of AAPA figure 14 by forming a motherboard laminate and then cutting into individual units having through vias filled with metal paste (or alternatively conductor films) such as taught by Kubota et al. instead of forming individual units because such a method of manufacturing would have been considered a mere substitution of art-recognized equivalent manufacturing methods that would have advantageously facilitated mass production of the devices

having connecting electrodes on their sides thereby reducing manufacturing costs, as would have been well known. Also, alternatively it would have been considered obvious to one of ordinary skill in the art to have formed the conductive films (e.g. in the case where films were chosen instead of metal paste in the vias) by plating since plating is a well-known method for forming conductive films. Also, with respect to claim 6, the Kubota et al. reference shows electrodes 6 formed in the grooves of the device body 5 (see Fig. 16 as compared to Fig. 15), which suggests forming the grooves in the ferrite of AAPA figure 14 as an art-recognized alternative.

Also, regarding the new Claim 1 and 10 limitations that the center-electrode pattern on the top surface and conductive pattern on the bottom of the ferrite being formed by a plated, printed, sputtered, vapor deposited, or an applied paste conductive material method, these limitations are product-by process limitations which cannot be given any patentable weight in an apparatus claim since only the final product is patentable in an apparatus claim, thus the conductors in the combination of AAPA and Kubota meet the limitations of Claims 1 and 10.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA figure 14 and Kubota et al (of record) above, and further in view of Marusawa et al. (JP 09-294006 of record).

As noted above, the combination of the AAPA figure 14 and Kubota et al (of record) shows side ports P1-P3 that do not extend to the bottom surface, which has the

ground conductive pattern. However, AAPA figure 14 does not show the ground conductive pattern having gaps.

Figures 2 and 4 of the Marusawa et al. reference discloses a nonreciprocal device with gaps in the ground pattern 17 where the ports extend to the bottom of the block.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of the invention to have substituted the ports that extend to the bottom of the block with a gap in the ground electrode as taught by Marusawa et al. in the nonreciprocal device of AAPA figure 14 and Kubota because such a modification would have been considered a mere substitution of art-recognized equivalent side port electrodes with a corresponding ground pattern.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA figure 14 in view of Kubota et al. of record and Marusawa et al. (US 5,498,999) of record.

The combination of the AAPA and Kubota teach a non-reciprocal device as described above. However, they do not explicitly teach that the top and bottom conductors are formed by a printing method (or one of the other claim 5 alternative methods).

Marusawa teaches conductor electrodes can be screen-printed on the laminated magnetic body of a non-reciprocal device.

It would have been considered obvious to one of ordinary skill in the art to have applied the conductors in the AAPA/Kubota combination device by screen-printing (such

as taught by Marusawa) instead of punching, because it would have been considered a well-known art-recognized equivalent/alternative method for forming conductors on a ferrite board.

Response to Arguments

Applicant's arguments filed 4/6/04 have been fully considered but they are not persuasive.

Regarding Claims 1, 5, and 10, applicant argues that the AAPA top and bottom electrodes are punched rather than applied by another method such as printing.

With regard to claims 1 and 10, applicant's argument is not convincing since these claims are apparatus claims. Only the final product structure is patentable in an apparatus claim and thus the AAPA/Kubota combination conductors satisfy the claim language.

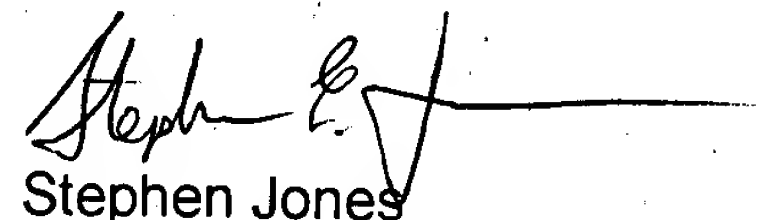
With regard to the method Claim 5, applicant's arguments are moot in view of the new grounds of rejection using the Marusawa et al. reference (US 5,498,999) as detailed in the above rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen E. Jones whose telephone number is 571-272-1762. The examiner can normally be reached on Monday through Friday from 8 AM to 4 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert J. Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Stephen Jones
Patent Examiner
Art Unit 2817

SEJ